

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	57	("20010017278" "3133132" "3442389" "3457170" "3608730" "4156645" "4239624" "4434057" "4981594" "5238574" "5310486" "5458781" "5520816" "5587083" "5670053" "5858240" "6113797" "6162361" "6171497" "6177011" "6187200" "6190556" "6508936" "6783682" "7144511").PN.	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:22
L2	5	"charged mosaic membrane"	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:22
L3	1	2 and "reverse osmosis"	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:23
L4	1	3 and desalination	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:27
L5	0	reverse osmosis and "reduced-pressure evaporation"	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:28
L6	0	desalination and "reduced-pressure evaporation"	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:28
L7	20	"reduced-pressure evaporation"	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:29
L8	0	7 and seawater	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:29
L9	0	7 and sea water	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:29
L10	16	7 and water	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:30
L11	0	10 and sea	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:30
L12	1	10 and waste same water	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:33
L13	2	"vacuum evaporator" and "centrifugal flow"	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:46

## EAST Search History

L14	0	13 and seawater	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:43
L15	0	13 and sea same water	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:43
L16	0	desalination and sea water and evapor (r)	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:47
L17	0	desalination and evapor	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:47
L18	0	evapor and seawater	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:48
L19	1	evapor and sea same water	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:49
L20	0	evapor same rtm water	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:50
L21	0	evapor same rtm	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:50
L22	581	210/652.ccls.	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:50
L23	0	22 and evapor	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:51
L24	49	22 and evaporator	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:51
L25	4	22 and evaporator and centrifugal flow	USPAT; EPO; DERWENT	AND	ON	2007/07/25 11:51

**US-PAT-NO:**

5304307

**DOCUMENT-IDENTIFIER:** US 5304307 A

**TITLE:**

Charged asymmetric mosaic membranes

**DATE-ISSUED:**

April 19, 1994

**INVENTOR-INFORMATION:**

NAME	CITY	STATE	ZIP CODE	COUNTRY
Linder; Charles	Rehovot	N/A	N/A	IL
Nemas; Mara	Neve Monoson	N/A	N/A	IL
Perry; Mordechai	Petach Tikva	N/A	N/A	IL
Ketraro; Reuven	Rishon Letzion	N/A	N/A	IL

**ASSIGNEE INFORMATION:**

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Aligena AG	Basel	N/A	N/A	CH	03

**APPL-NO:** 07/801859

**DATE FILED:** December 3, 1991

**FOREIGN-APPL-PRIORITY-DATA:**

COUNTRY	APPL-NO	APPL-DATE
GB	9026219	December 3, 1990

**INT-CL-ISSUED:**

[05] B01D013/00

**INT-CL-CURRENT:**

TYPE	IPC DATE
CIPS	<u>B01 D 69/02</u> 20060101
CIPS	<u>B01 D 69/14</u> 20060101
CIPS	<u>B01 D 67/00</u> 20060101
CIPS	<u>B01 D 69/00</u> 20060101

**US-CL-ISSUED:** 210/490 , 210/500.27 , 210/500.29 , 210/500.34 ,  
210/500.37 , 210/500.38 , 210/500.39 , 210/500.4 ,  
210/500.41 , 210/500.43 , 210/651

**US-CL-CURRENT:** 210/490 , 210/500.27 , 210/500.29 , 210/500.34 ,  
210/500.37 , 210/500.38 , 210/500.39 , 210/500.4 ,  
210/500.41 , 210/500.43 , 210/651

**FIELD-OF-CLASSIFICATION-SEARCH:** 521/134; 210/490 ; 210/500.27 ; 210/500.29 ; 210/500.34  
; 210/500.37 ; 210/500.38 ; 210/500.39 ; 210/500.4 ;  
210/500.41 ; 210/500.43 ; 210/651

**\*\*See application file for complete search history\*\***

## REF-CITED:

### U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>3886066</u>	May 1975	Chen et al.	210/500.41 N/A N/A
<u>4067803</u>	January 1978	Quentin	210/22 N/A N/A
<u>4514304</u>	April 1985	Miyaki et al.	210/638 N/A N/A
<u>4778596</u>	October 1988	Linder et al.	210/500.38 N/A N/A
<u>4792404</u>	December 1988	Swedo et al.	210/654 N/A N/A
<u>4992221</u>	February 1991	Malon et al.	210/500.27 N/A N/A
<u>5024765</u>	June 1991	Linder et al.	210/651 N/A N/A
<u>5049282</u>	September 1991	Lindes et al.	210/651 N/A N/A

### FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
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2524870	December 1975 DE
2166382	August 1973 FR
1423663	February 1976 GB

**OTHER PUBLICATIONS** "Journal of Membrane Science", 43(2/3), 205-216 (May 1989).

"Journal of Membrane Science", 54(1/2), 75-87 (Nov. 1990).

**ART-UNIT:** 153

**PRIMARY-EXAMINER:** Kight, III; John

**ASSISTANT-EXAMINER:** Cooney, Jr.; John M.

**ATTY-AGENT-FIRM:** Wenderoth, Lind & Ponack

## **ABSTRACT:**

The present invention relates to semipermeable mosaic polymer membranes of asymmetric structure and with a macroscopic distribution of the mosaic-forming anionic and cationic charges (sites). The membranes can be prepared by casting a polymer solution of an optionally charged matrix-forming polymer and at least one precursor polymer, incompatible with the matrix-forming polymer, in a selected solvent, into a film, forming a skin on one side of the film, precipitating the skinned film to form the asymmetric membrane and charging it by chemical reactions to introduce or complete their mosaic structure. These membranes have good permeability for electrolytes, such as salts of mono- or polyvalent inorganic acids, while retaining low molecular weight organic solutes.

13 Claims, 0 Drawing figures

Exemplary Claim Number: 1

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## **Brief Summary Text - BSTX (3):**

The separation of mono-, di- or polyvalent salts, such as sodium chloride, or sodium sulfate or sodium triphosphate, from low molecular weight (MW<1000) organic

compounds in (aqueous) solutions, via membranes is an important industrial separation problem which has not been economically solved. Membranes have been shown to offer an economical solution to many separation problems because of their ability to concentrate without a phase change, and to separate different solutes. The traditional membrane process of **reverse osmosis** (RO) rejects all salts and organics. The relatively newer membranes of selective **reverse osmosis** cannot efficiently achieve the above separations even though they are designed to pass salt and retain the organic solutes. The mode of separation in selective RO is based on size and electrostatic discrimination, and the proper choice of materials has not been found to give e.g. a sulfate passage. However, membrane structures containing separated macroscopic domains (0.05 to 100 microns) of anionic and cationic ion exchange materials connecting the opposite faces of the rejecting layer (called a **charged mosaic membrane**) have a built-in salt transport mechanism. They have been postulated and shown to give separation between organic solutes and salts. Under a pressure gradient the membranes preferential transport salt across the mosaic while retaining the organic solute [H. Kowatch et al., *Macro-molecules* 21, 625-628, 1988].

#### **Detailed Description Text - DETX (25):**

The basic principles for making asymmetric membranes are known in the literature. Membrane casting may be performed by casting procedures cited in the patent literature, for example in U.S. Pat. No. 4,029,582, GB-A-2,000,720, U.S. Pat. No. 3,556,305, U.S. Pat. No. 3,615,024, U.S. Pat. No. 3,567,810, or CA-A-1,234,461; further in **Desalination** 36, 39-62 (1981). Thus, the polymer or its derivatives may be dissolved in a suitable solvent or mixture of solvents (for example N-methylpyrrolidone (NMP), dimethylformamide (DMF), dimethylsulfoxide (DMSO), hexamethylphosphotriamide, N,N-dimethylacetamide (DMCA), dioxane), which may or may not contain co-solvents, partial tetrahydrofuran solvents, non-solvents, salts, surfactants or electrolytes for altering or modifying the membrane morphology and its flux and rejection properties (i.e. acetone, ethanol, reethanol, formamide, water, methylethylketone, triethyl phosphate; sulfuric acid, hydrochloric acid; organic acids, preferably of low molecular weight such as formic, acetic or lactic acid; surfactants and emulsifiers of the group of e.g. partial esters of fatty acids and sugar alcohols or their ethylene oxide adducts, e.g. polyoxyalkylated fatty acid partial esters of polyhydric alcohols, such as polyoxyethylene sorbitan tristearates or polyoxyethylene sorbitan trioleates; polyhydric alcohol fatty acid esters such as sorbitan monolaurate, -monopalmitate, -monostearate, -monooleate, -tri-stearate or -trioleate; sodium dodecyl sulfate; fatty acid amides, such as coconut fatty acid diethanol amine adducts; or alkylphenol polyglykoethers, sodium dodecyl sulfate (SDS), or sodium dodecylbenzene sulfonate; sodium hydroxide, potassium chloride, zinc chloride, calcium chloride, lithium nitrate, lithium chloride, magnesium perchlorate, etc.

**Detailed Description Text - DETX (51):**

The inorganic salts present in the solutions, which are subjected to the membrane treatment (**reverse osmosis**), are preferably alkali metal salts of mono- or polyvalent inorganic acids, such as alkali metal halides or sulfates, e.g. sodium chloride and sodium sulfate.

**Detailed Description Text - DETX (52):**

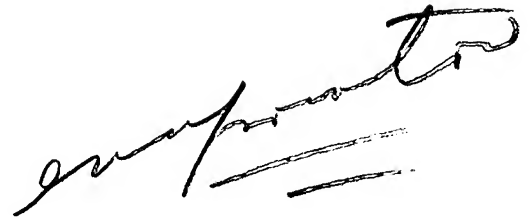
The inventive membranes are very suitable for membrane separating processes, especially **reverse osmosis** processes. They can be prepared and used as flat in plate and frame devices or spiral wound elements, hollow fibers or tubular membranes in corresponding separation devices, such as modules. They have superior rejection to organic compounds of low molecular weight, good flux properties, superior flexibility, to chemical and/or biological degradation.

**US-PAT-NO:** 6616937  
**DOCUMENT-IDENTIFIER:** US 6616937 B2  
**TITLE:** Cosmetic composition containing a distillate of a green plant juice and a process for preparing the same  
**DATE-ISSUED:** September 9, 2003

**INVENTOR-INFORMATION:**

NAME	CITY	STATE	ZIP CODE	COUNTRY
Amano; Takahiko	Ventura	CA	93004	N/A

**APPL-NO:** 10/146963  
**DATE FILED:** May 17, 2002



**PARENT-CASE:**

**CROSS REFERENCE TO RELATED APPLICATION**

This application is a continuation of application Ser. No. 09/563,921, filed May 4, 2000 now abn.

**INT-CL-ISSUED:** [07] A61K007/42 , A61K035/78 , A61K009/14 , A61K009/16

**INT-CL-CURRENT:**

TYPE	IPC DATE
CIPS	<u>A61 Q 19/02</u> 20060101
CIPS	<u>A61 K 8/97</u> 20060101
CIPS	<u>A61 K 8/96</u> 20060101
CIPS	<u>A61 Q 19/00</u> 20060101



**US-CL-ISSUED:** 424/401 , 424/488 , 424/489 , 424/195.1

**US-CL-CURRENT:** 424/401, 424/488 , 424/489 , 424/750

**FIELD-OF-CLASSIFICATION-SEARCH:** 424/401; 424/488 ; 424/499 ; 424/195.1

**\*\*See application file for complete search history\*\***

## **FOREIGN PATENT DOCUMENTS**

**FOREIGN-PAT-NO PUBN-DATE COUNTRY US-CL**

1 358 052                      June 1974              GB

**ART-UNIT:** 1616

**PRIMARY-EXAMINER:** Dodson; Shelley A.

**ATTY-AGENT-FIRM:** Sherman & Shalloway

## **ABSTRACT:**

An improved cosmetic composition comprises at least one cosmetically effective ingredient and water, where at least a portion of the water has been replaced by a distillate of a green plant juice. The distillate is obtained from a green plant juice, produced by squeezing green plants, by evaporation of the green plant juice to cause a concentration increase of the green plant juice.

8 Claims, 0 Drawing figures

Exemplary Claim Number: 1

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## **Detailed Description Text - DETX (12):**

The concentration of the green plant juice (i.e. solids content) used in the drying step should be in the range of about 1.5 to 30% and preferably as high as possible within those limits. In order to concentrate the green juice to this end, a continuous thin-film

concentrator or a vacuum distillation apparatus or the like may be used, preferably, a **centrifugal-flow**, thin-film **vacuum evaporator** wherein, most preferably, the atmospheric pressure is reduced so as to allow evaporation of water at a temperature of about 40.degree. C. It is the distillate of the green plant juice produced in this concentration step, a by-product normally disposed of as waste, that is utilized in the present invention.

#### **Detailed Description Text - DETX (29):**

Young green leaves of barley (i.e., leaves and stems of barley before maturation) are thoroughly washed with water, disintegrated with a mixer, and squeezed. A green juice is obtained by filtering off fibrous residue. The green juice is vacuum distilled (pressure=about 55 mm Hg) in a **centrifugal-flow-thin-film vacuum evaporator** (EVAPOR.RTM., Model No. CEP-305, made by Okawara Mfg. Co., Ltd. Shizuoka, Japan), the juice being poured on to the conical evaporating surface, rotating at 300 to 500 RPM, to form a thin film of about 0.1 mm thickness, with a residence time on the evaporating surface of only about one second. The outside of the rotating conical evaporating surface is jacketed and heated evenly by steam (inlet temp.=130.degree. C., outlet temp.=80.degree. C.). A tube at the edge of the rotating evaporating surface collects concentrate. ✕